

CLATMS

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1 to 20 carbon\atoms).

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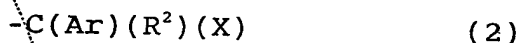
is a living radical polymerization system.

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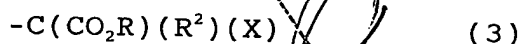
atom transfer radical polymerization, and the product block copolymer is a multiblock copolymer.

9. The polymer according to Claim 8, wherein the group in polymer (I) which is capable of serving as an initiator group for atom transfer radical polymerization is represented by the general formula 2:



- (wherein Ar is an aryl group, which may optionally have a substituent, R^2 is a hydrogen atom or a hydrocarbon group containing 1 to 20 carbon atoms and X is chlorine, bromine or iodine).

10. The polymer according to Claim 8, wherein the group in polymer (I) which is capable of serving as an initiator group for atom transfer radical polymerization is represented by the general formula 3:



- (wherein R^2 is a hydrogen atom or a methyl group, R is an organic group containing 1 to 20 carbon atoms and X is chlorine, bromine or iodine).

11. The polymer according to Claim 9 ~~or 10~~, wherein, in the general formulas 2 and 3, R^2 is a hydrogen atom.

12. The polymer according to ~~any of Claims 7 to 11~~, wherein the metal complex to serve as a catalyst for atom transfer radical polymerization is a copper, nickel, ruthenium or iron complex.

13. The polymer according to Claim 12, wherein the metal complex to serve as a catalyst for atom transfer radical polymerization is a copper complex.

14. The polymer according to ~~any of Claims 6 to 13~~,

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Claim 7

Claim 6

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Claim 1

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21. The multiblock copolymer according to Claim 20,

wherein the polymer (I) is produced by using an allyl halide as an initiator.

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22. The polymer according to ~~any of Claims 1 to 17~~,
 5 wherein the polymer (I) is produced by living cationic polymerization.

Claim 1

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23. The polymer according to Claim 22, wherein the polymer (I) produced by living cationic polymerization is selected from the group consisting of styrenic polymers, isobutylene polymers, polyether polymers and vinyl ether polymers.

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24. The polymer according to ~~any of Claims 1 to 17~~,
 wherein the polymer (I) is a vinyl polymer.

Claim 1

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25. The polymer according to ~~any of Claims 1 to 17~~,
 wherein the polymer (I) is a polyolefin polymer.

Claim 1

a 20

26. The polymer according to ~~any of Claims 1 to 17~~,
 wherein the polymer (I) is a hydrocarbon polymer.

Claim 1

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27. The polymer according to ~~any of Claims 1 to 17~~,
 wherein the polymer (I) is a polyester polymer.

Claim 1

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28. The polymer according to ~~any of Claims 1 to 17~~,
 wherein the polymer (I) is a polyether polymer.

Claim 1

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29. The polymer according to ~~any of Claims 1 to 17~~, wherein the polymer (I) is a polysiloxane polymer.

Claim 1

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30. The polymer according to ~~any of Claims 1 to 29~~,
 wherein the polymer (I) has a glass transition point not lower than 25°C and the polymer chain newly produced by atom transfer radical polymerization with the addition of polymer (I) has a

Claim 1

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